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Breeding and breeding season notes on the birds of Mzimbiti and adjacent low-lying areas of Moçambique

by

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SYNOPSIS

Mzimbiti lies between Beira and the Pungwe River on the railway line to Rhodesia. This paper is based mainly on the collection of birds and eggs now in the Natal Museum made by the late P. A. Sheppard in the area from 1908 to 1910. 59 species are recorded breeding in the area for the first time. Despite the difference in altitude and climate the majority of species breed at the same time as they do on the Rhodesian plateau. Six species appear to have somewhat different seasons.

INTRODUCTION

Mzimbiti, spelt Masembeti in Portuguese, lies on the Beira/Rhodesian railway some 5 kilometres west of Dondo (19°36'S, 34°44'E) in Moçambique at a height of approximately 30 metres a.s.l. (Sclater, 1911). The natural vegetation consists predominantly of *Brachystegia* forest which, because of the lack of a clearly defined dry season combined with a high water table, is permanently green. In other areas the *Brachystegia* grows as a deciduous savana woodland and where it has been cleared it is usually replaced by *Uapaca* trees. Owing to the very flat nature of the ground there are large swamps and vleis or tandos which drain sluggishly into the Pungwe River. The area covered by this paper is the coastal plain from Beira to the foot of the escarpment at Vila Machado and includes that part of the Gorongosa National Park that lies in the Urema Trough.

There has been no attempt to give a systematic account of the birds of Mzimbiti despite its being the type locality for a number of species and races of birds. Collection and sight records of various species have been published by Sheppard (1909, 1910, 1914), Sclater (1911), Benson (1947), Frade (1953), Long (1964) and Clancey (1968, 1969*a*). Recently M. O. E. Baddeley has collected material from Dondo for the Field Museum of Natural History in Chicago and the Zoologisches Museum Alexander Koenig in Bonn.

Sheppard spent some three years at Mzimbiti where he was manager of an experimental farm belonging to the Moçambique Company (Brooke, 1966, 1968). He mentioned (op. cit.) a number of his collected birds and eggs but the majority of his breeding records have never been reported. I have examined his surviving material in the Natal, Durban and Transvaal Museums, the majority of the material being in the Natal Museum. In addition, the National Museum of Rhodesia in Bulawayo has made available to me Sheppard's notebooks which start in January 1909. These give additional data on some of the surviving material and also contain many additional records as well as notes on migration, nest sites, feeding and general behaviour. Since breeding for data Moçambique are very scanty much of this has been set out in detail. His detailed descriptions of nests and nest sites have usually been omitted since the information may be found in the standard works on African birds. In all cases nest record cards have been deposited with the Percy FitzPatrick Institute of African Ornithology. The few other records from the area have also been included. The purpose of this paper is to report on Sheppard's collections of bird breeding data as promised in Brooke (1966) with particular reference to breeding seasons.

The breeding seasons of most birds in the former Federation of Rhodesia and Nyasaland are fairly well known, the details being set out in Benson *et al.* (1964). Rhodesia lies to the west in the same latitudes as Mzimbiti. It is largely plateau country and partly protected from rain coming in from the Indian Ocean by its eastern highlands (see Brooke, 1966). For many Mzimbiti species there are too few records to enable anything to be said of their breeding seasons even though these records usually fall in the months in which such species breed in Rhodesia, particularly in October, the principal breeding month for woodland birds. For eight species the records are sufficiently numerous to suggest that the breeding season are the same in both areas (Table 1): they are—

Treron australis
Halcyon albiventris
Halcyon leucocephala
Merops pusillus
Eurystomus glaucurus
Pycnonotus barbatus
Nectarinia bifasciata
Nectarinia amethystina

For six species—

Isipidina picta
Lybius torquatus
Pseudhirundo griseopyga
Turdus libonyana
Anthus novaeseelandiae
Ploceus bicolor

the data given under the species headings show a somewhat different season at Mzimbiit from that prevailing in Rhodesia (Table 1). This is most marked in *Anthus novaeseelandiae.* Percentages are not used in Table 1 as this would mask the disparity in size between the Mzimbiti and Rhodesian samples.

The nomenclature and order of the systematic list which follows is that of Clancey (1965–6, 1969*b*) except in the Hirundinidae where the generic arrangement of Mayr and Bond (1943) is followed. A juvenal is a bird in its first covering of true feathers (Eisenmann, 1965). A record without locality or finder is by Sheppard from Mzimbiti. To save repeating the year each time records are given in chronological order as in Brooke (1966, 1968). The following abbreviations are used:

C/*x*	Clutch of *x* eggs;
D.M.	Durban Museum and Art Gallery;
N.M.	Natal Museum, Pietermaritzburg;
P.F.I.A.O.	Percy FitzPatrick Institute of African Ornithology, Cape Town;
Q.V.M.	Queen Victoria Museum, Salisbury;
T.M.	Transvaal Museum, Pretoria.

TABLE 1

Comparative breeding seasons of some birds occurring at Mzimbiti and on the Rhodesian plateau (Rhodesian data from the Rhodesian Ornithological Society's nest record card collection as at February 1970): number of records by months.

	July	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*	*Total*
A. Species in which no significant difference in breeding season is apparent.													
Treron australis													
Mzimbiti	—	—	1	1	4	1	—	—			—		7
Rhodesia	1	4	35	51	22	7	1	1			2		124
Halcyon albiventris													
Mzimbiti			6	10	1	1							18
Rhodesia			11	52	18	2							83
Halcyon leucocephala													
Mzimbiti			—	4	5	—							9
Rhodesia			6	33	19	2							60
Merops pusillus													
Mzimbiti			3	10	3	—	—						16
Rhodesia			12	53	16	6	2						89
Eurystomus glaucurus													
Mzimbiti			—	4	3	—							7
Rhodesia			3	12	14	2							31
Pycnonotus barbatus													
Mzimbiti	—	—	2	8	5	3	—	—	—	—			18
Rhodesia	2	11	77	186	136	53	22	8	9	1			505
Nectarinia bifasciata													
Mzimbiti			—	9	9								18
Rhodesia			6	2	2								10
Nectarinia amethystina													
Mzimbiti		—	2	5	3	1	—	—					11
Rhodesia		1	17	17	12	3	2	1					53
B. Species with apparently different breeding seasons.													
Ispidina picta													
Mzimbiti			—	2	2	2	1						7
Rhodesia			3	4	4	3	—						14
Lybius torquatus													
Mzimbiti		—	—	—	4	2	1			—			7
Rhodesia		1	19	42	13	4	1			1			81
Pseudhirundo griseopyga													
Mzimbiti	14	9	1	—									24
Rhodesia	12	26	4	1									43
Turdus libonyana													
Mzimbiti		—	3	—	1	—	—		—	1			5
Rhodesia		6	125	174	113	26	3		1	—			448
Anthus novaeseelandiae													
Mzimbiti	3	1	—	—	—	—	—	—			1	2	7
Rhodesia	—	4	10	11	13	7	3	1			—	2	51
Ploceus bicolor													
Mzimbiti			1	3	2	1	—						7
Rhodesia			2	—	5	3	1						11

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LIST OF SPECIES

Anatidae

Alopochen aegyptiacus (L.)

C/10 was seen by B. V. Neuby Varty on 2 July 1956 in the Gorongosa National Park (P.F.I.A.O.).

Accipitridae

Neophron monachus (Temminck)

The Q.V.M. has two C/1 taken in the Gorongosa National Park on 28 June 1923 and 22 July 1926: the former clutch was freshly laid.

Aviceda cuculoides Swainson

A fresh egg and the male parent were collected on 11 November 1909 (Sheppard, 1910, 1914): the egg is in the N.M.

Kaupifalco monogrammicus (Temminck)

Sheppard found three nests: C/3 on 7 October 1909 when it was robbed by a labourer (one of the eggs is in the N.M.), C/1 on 25 October much incubated and now in the N.M. A third nest was found being built on 4 November by the female with the male in attendance in the area. She would carry substantial twigs in her feet into the nest tree and there transfer them to her bill where they were carried to the nest and inserted into the structure. This nest contained a chick and a hatching egg on 16 November. The incubation period of this species is not known but is sure to exceed 14 days which means that building up the nest continues after incubation of the eggs has started. See also Sheppard (1910, 1914).

Circaetus fasciolatus Kaup

A male now in the N.M. was collected on a nest containing C/1 on 28 September 1907 10,5 kilometres out of Beira on the road to Dondo.

Polyboroides radiatus (Scopoli)

Sheppard (1910) gives two records: C/1 and C/2 both for October 1909. The female taken at one nest is in the N.M. A long extract from Sheppard's notebook on these nests appears in Priest (1935: 343).

Phasianidae

Francolinus rovuma Gray

Chubb (1914) mentions C/4 taken in the Zambezi district by an unknown collector on 14 August 1909.

Francolinus afer (S. Müller)

A clutch of eggs was collected on 15 December 1907 which went to the N.M. A female was collected with an oviduct egg on 2 November 1908.

Guttera edouardi (Hartlaub)

C/6 was found on the edge of thick forest on 22 November 1909, the parent being flushed from the nest. The next day when an attempt to trap a parent was made there were only five eggs and the day after (the 24th) there were only four eggs with traces of shell and contents in the nest. The eggs were then taken and went to the N.M.

Charadriidae

Chardrius marginatus Vieillot

A. B. Fletcher (*in litt.*) saw two pairs with young in down in late June 1959 on the beach at Sofala.

Charadrius pecuarius Temminck

I found two pairs, each with C/2, on the floodplain of the Lagoa de Urema on 10 September 1970.

Vanellus lugubris (Lesson)

There is a downy juvenal in the Q.V.M. collected on 18 September 1960 by R. W. Rankine on the Pungwe Flats: The clutch from which it came was presumably laid in early August.

Vanellus albiceps Gould

Chubb (1914) mentions an oviduct egg taken by A. D. Millar in October 1903 from a bird on the Dingi Dingi River, a left-bank tributary of the Pungwe River.

Vanellus senegallus (L.)

The D.M. has C/3 taken on 20 September 1903 by A. D. Millar on the Bucadzi River near Beira: this is doubtless the C/1 referred to by Chubb (1914).

Glareolidae

Rhinoptilus chalcopterus (Temminck)

Chubb (1914) mentions C/2 collected by A. D. Millar on the Bucadzi River on 28 September 1903. The T.M. has C/3 collected in October 1903 on the Vandusi River in the Gorongosa National Park.

Laridae

Larus cirrocephalus Vieillot

B. V. Neuby Varty saw a nest containing C/2 on 2 July 1956 in the Gorongosa National Park (P.F.I.A.O.).

Columbidae

Streptopelia semitorquata (Rüppell)

A pair were watched building a nest 6 m up in the top of a tree in open woodland on 25 October 1909. On 2 November the female and C/2 were collected and are now in the N.M. Incubation had already started and the female's crop was crammed with bamboo seeds. The same nest was re-used and contained one egg on 28 December. On 5 June 1910 a number were shot feeding on newly sown cowpeas: a female now in the T.M. was examined and found to have a number of ovarian follicles enlarging indicating that she was about to start laying.

Turtur chalcospilos (Wagler)

Sheppard worked at a time when this species was not usually distinguished from *T. afer* (L.). Since both species have been collected at Mzimbiti most of his breeding records must be regarded as indeterminate. However one record is authenticated by a female collected on the nest on C/2 on 13 November 1909 and now in the N.M. Two male juvenals now in the T.M. were collected on 23 February 1907.

Treron australis (L.)

Seven nests with eggs were found, always outside forest: C/1: 1, C/2: 6, Sept, 1, Oct. 1, Nov. 4, Dec. 1. The N.M. has four of the clutches of two eggs. See also Table 1.

Psittacidae

Poicephalus cryptoxanthus (Peters)

Sheppard found two nests: C/3 on 18 September 1910 and three partly feathered young on 10 November.

Musophagidae

Tauraco porphyreolophus (Vigors)

Sheppard found four nests: C/3 on 15 November 1908 and now in the D.M. (Chubb 1914); C/2 much incubated on 5 December 1909 from a nest in a low tree in a small forest patch: the parents were watched but not collected; a female on C/3 slightly incubated on 23 October 1910; the eggs are in the N.M.; C/2 now in the N.M. and the female were collected on 19 November 1907 (Sheppard, 1909). *T. corythaix* (Wagler) also occurs freely at Mzimbiti and Sheppard collected a number of specimens. This is a more purely forest form whereas *T. porphyreolophus* is a bird of thick cover outside large forests. A study of the comparative ecology of these two loeries in forest savanna mosaic should prove interesting.

Cuculidae

Cuculus solitarius Stephens

Sheppard (1910, 1914) reports an egg now in the N.M. from a nest of *Erythropygia quadrivirgata* (q.v.) found on 23 November 1909.

Centropus superciliosus Hemprich & Ehrenberg

Sheppard found a nest on 27 November 1910 containing three newly hatched young and an addled egg which is now in the N.M. The nest was one metre up in a thick clump of brambles and bushes. Another nest was found in a similar situation on 2 December half built. It contained two eggs on 8 December and four on the 12th. The next day the male was collected on the nest and the eggs were taken: all are now in the N.M.

Centropus senegalensis Swainson

A nest containing two eggs was found on 2 December 1910 in creeper clad low bushes. On 8 December it contained four eggs and an immature male with greyish-olive irises was shot beside it: the eggs are in the D.M. and the male is in the N.M.

Tytonidae

Tyto alba (Scopoli)

A solitary egg was collected at Beira on 25 August 1907 and is now in the N.M. (see Sheppard, 1909).

Strigidae

Glaucidium capense (Smith)

T. B. Oatley (*in litt.*) saw a newly fledged juvenal in Dondo forest on 18 November 1962. The T.M. has a number of specimens from there collected by Sheppard.

Bubo lacteus (Temminck)

I. C. Cannell (pers. comm.) photographed a nest containing a feathered chick on 10 September 1966. The nest was placed on an *Ansellia* orchid growing 4,5 m up on the side of an Ilala Palm in the Gorongosa National Park.

Caprimulgidae

Caprimulgus pectoralis Cuvier

C/2 was collected on 9 October 1903 by A. D. Millar in the Gorongosa National Park Chubb, 1914). Sheppard found three nests each with C/2: 10 October 1909 in the D.M. (Chubb, 1914); 11 October from bare soil in an opening in woodland together with the female: all three are in the N.M.; 12 November together with the female in recently burnt savana: the eggs are in the N.M. Sheppard noted when blowing the eggs that the yolks were pale lemon in colour.

Caprimulgus fossii Hartlaub

A. D. Millar took C/2 towards Gorongosa on 9 October 1903 (Chubb, 1914).

Macrodipteryx vexillarius (Gould)

C/2 now in the N.M. was found on 7 November 1909 on bare soil among thick low bushes.

Trogonidae

Apaloderma narina (Stephens)

A nest containing young which were fed by both parents was found on 14 December 1910 2,4 m up in a hole in an old isolated tree.

Alcedinidae

Alcedo semitorquata Swainson

Three nests were found in holes in a forested river bank: October 1908 with young; C/5 fresh on 12 September 1909; one egg on 19 September. The male was collected at the second nest and is now in the N.M. together with the eggs: the male is the type of *A. s. tephria* Clancey (1951) who does not mention its breeding. The nest hole was not newly excavated and the nest chamber was reached after 30 cm of tunnel.

Ispidina picta (Boddaert)

Seven nests were found and the parents were snared on the nests. Material from all except the seventh and the eggs of the fourth is in the N.M. Details: 31 October 1908 ♂ on C/4; 1 November ♂ on C/6; 14 November ♂ on C/4; 27 November ♂ on C/3; 8 January 1909 ♀ on C/4; 12 December ♀ on C/3 set; 12 December ♀ on C/4 fresh. It appears that both sexes incubate the eggs. There are no records of January laid eggs in Rhodesia (Table 1).

Halcyon albiventris (Scopoli)

Sheppard's first recorded nest of this species was found 10,4 km out of Beira on the

Dondo road on 4 November 1906. It contained three young nearly ready to fly: two of these are now in the T.M. Subsequently at Mzimbiti he found 17 nests: in all C/1: 3, C/2: 1, C/3: 10, C/4: 3; Sept. 6, Oct. 10, Nov. 1, Dec. 1. Nine clutches are in the N.M. together with six parents (♂, 5 ♀♀) taken at the nest including those mentioned by Sheppard (1909). This suggests that the female is more assiduous in incubation than the male. See also Table 1.

Halcyon leucocephala (S. Müller)

Sheppard found seven nests: C/2: 1, C/3: 2, C/4: 4; Oct. 4, Nov. 5. The two clutches mentioned by Sheppard (1909) are in the N.M., as is another clutch and four parents (♂, 3 ♀♀). One clutch is in the D.M. (Chubb, 1914) and two are in the T.M. Two of his nests were in holes in a river bank. See also Table 1.

Halcyon chelicuti (Stanley)

Sheppard found a nest 4,5 m up in an old tree on 23 October 1910 which contained one partly feathered youngster.

Meropidae

Merops superciliosus L.

Sclater (1911) records that C. H. B. Grant found C/6 at Mzimbiti on 24 October 1906.

Merops nubicoides Des Murs & Pucheran

The T.M. has C/5 collected on 4 October 1903 by A. D. Millar on the Pungwe River. Chubb (1914) records that the D.M. has fourteen eggs (number of clutches not stated) of this species taken between 4 and 10 October 1903 on the Pungwe River by A. D. Millar.

Merops bullockoides Smith

The T.M. has C/3 collected on 4 October 1903 by A. D. Millar in the 'Zambezi District'. In view of the data for the previous species this must be the Pungwe River. The same applies to the C/4 in the D.M. collected on the same date (Chubb 1914).

Merops pusillus S. Müller

Sheppard found 14 nests of which he mentioned one (1909): C/2: 1, C/3: 4, C/4: 4, C/5: 7; Sept. 3, Oct. 10, Nov. 3. Ten clutches and nine parents (5 ♂♂, 4 ♀♀) are in the N.M. and show that both parents brood the eggs. One clutch is in the Q.V.M. The summarized figures include the two records by C. H. B. Grant in Sclater (1911) from Beira and Mzimbiti. Sheppard noted that both parents were on the nest at 1830 hrs on 13 October when it was opened for examination. See also Table 1.

Merops hirundineus Lichtenstein

Seven nests were found: C/3: 2, C/4: 3, Sept. 2, Oct. 3, Nov. 2. The two clutches with their female parents mentioned in Sheppard (1909) are in the N.M. as is a third clutch; one clutch is in the T.M. as is a newly fledged juvenal and one clutch is in the D.M. (Chubb 1914). In June and July 1909 Sheppard twice saw parties of about eight birds sitting in a tree and taking insects off the leaves.

Coraciidae

Coracias caudata L.

The only record is of C/3 taken on 26 September by Sheppard (1910).

Eurystomus glaucurus (S. Müller)

Seven nests were found: C/2: 3, C/3: 3; Oct. 4, Nov. 3. One clutch is mentioned by Sheppard (1909) and two others are in the N.M. See also Table 1.

Upupidae

Upupa epops L.

The T.M. has a male juvenal with short bill and tail taken by Sheppard on 14 October 1906 10,4 km out of Beira on the Dondo road.

Phoeniculidae

Phoeniculus purpureus (Miller)

Sheppard found a nest in a dying tree on 23 October 1910 and on 27 October took the female and C/3 fresh which are all now in the N.M. The female was being fed with caterpillars by three birds. Another nest containing three young was found on 3 December: both parents were feeding them.

Capitonidae

Lybius torquatus (Dumont)

Seven nests were found: C/1: 1, C/2: 2, C/3: 1, C/4: 1, C/5: 1,; Nov. 4, Dec. 2, Jan. 1. Five clutches are in the N.M. as are three parents shot near their nests. In Rhodesia the peak breeding month is October (Table 1). Sheppard found that brooding birds sat very tight and that much of the nest branch may be cut away before they will leave. At Mzimbiti they were parasitized by *Indicator minor* (see under that species below).

Stactolaema leucotis (Sundevall)

In addition to the nest with a fully feathered youngster found on 5 December 1909 (Sheppard, 1910) another was found on 4 December 1910 containing six half-feathered young in a dead branch.

Pogoniulus bilineatus (Sundevall)

The only record is of C/2 on 12 December 1909 (Sheppard 1910).

Indicatoridae

Indicator minor Stephens

On 25 October 1909 a male was shot trying vigorously to enter a nest of *Lybius torquatus* despite the opposition of the owners: it is now in the T.M. where the label says it was collected 10,4 km out of Beira. The date is not suitable for this locality as Sheppard lived and collected there up to late 1907 and then went to Mzimbiti and his notebook is clear that the specimen was obtained at Mzimbiti. On 20 November 1909 he shot and wounded a female trying to enter another *L. torquatus* nest. On picking it up he found that it had laid an egg. The bird is, I think, the specimen in the N.M. dated 20 October 1909: doubtless a clerical error of Sheppard's. Another female was shot on 3 December 1910 trying to enter a *L. torquatus* nest: this is in the N.M.

Eurylaemidae

Smithornis capensis (Smith)

Four nests were found: C/2 on 2 December 1909, C/1 plus an oviduct egg in the snared female on 4 December, C/3 on 13 December 1910, C/1 on 13 December. The first and fourth clutches are in the N.M. and the third is in the T.M.

Pittidae

Pitta angolensis

The T.M. has a juvenal with short bill, wings and tail taken on 2 March 1908 at Mzimbiti (see Benson, 1944).

Hirundinidae

Hirundo smithii Leach

Chubb (1914) records C/3 collected by A. D. Millar on the Pungwe River on 22 October 1903. H. D. Jackson (pers. comm.) saw young in the nest on 24 September 1963 in the Gorongosa National Park.

Cecropis abyssinica (Guerin-Meneville)

The T.M. has a short tailed juvenal from Mzimbiti taken on 12 May 1908.

Pseudhirundo griseopyga (Sundevall)

Sheppard found 24 nests: C/2: 1, C/3: 2, C/4: 9, C/5: 2; July 14, Aug. 9, Sept. 1. Two clutches, one with both parents, are in th N.M., one clutch is in the T.M. and one in the D.M. (Chubb, 1914). See also Sheppard (1909). In Rhodesia August is the peak egg-laying month (Table 1).

Dicruridae

Dicrurus adsimilis (Bechstein)

Sheppard found three nests: C/1 plain white on 7 October 1908, young in the nest on 19 October 1909, one feathered youngster in a nest on 26 October.

Dicrurus ludwigii (Smith)

Four nests were found: C/3 with both parents on 27 September 1908, two C/3 on 14 November 1909, three young on 23 October 1910. The two parents and the first three clutches are in the N.M. and the female from one of the 14 November nests is in the American Museum of Natural History in New York (see Vaurie, 1949).

Oriolidae

Oriolus larvatus Lichtenstein

Sheppard found two nests: female on C/1 addled on 16 October 1909 (both are in the N.M.); young in the nest on 18 October.

Paridae

Parus niger Vieillot

C/4 with both parents were taken on 18 October 1908 and are now in the N.M.

Pycnonotidae

Pycnonotus barbatus (Desfontaines)

Sheppard found 18 nests, one at 10,4 km out of Beira and 17 at Mzimbiti. They summarize—C/2: 8, C/3: 10; Sept. 2, Oct. 8, Nov. 5, Dec. 3. 14 clutches and four female parents are in the N.M. See also Table 1.

Phyllastrephus flavostriatus (Sharpe)

The T.M. has C/3 taken on 10 October 1908 attributed to this species. *P. flavostriatus* is not known to occur in coastal forest savanna mosaic in the latitude of Beira though it does occur in the latitude of Moçambique to the north. An inspection of Sheppard's notebook shows that he attributed the clutch to *Pycnonotus barbatus* and it has been included among the records for that species above.

Andropadus importunus (Vieillot)

The species occurs at Mzimbiti as there is material from there in the National Museum of Rhodesia at Bulawayo taken in May 1954. The local race is *A. i. hypoxanthus* Sharpe which is extraordinarily like *A. flaviventris* in colour and size. Sheppard believed that he collected eggs and specimens of *A. importunus* but all his specimens prove to be *A. flaviventris*. His notes on these bulbuls are best regarded as indeterminate and only those clutches supported by surviving material are recorded in this paper under *A. flaviventris* below. The five clutches in the N.M. attributed to *A. importunus* are also best regarded as indeterminate.

Andropadus flaviventris (Smith)

The N.M. has three males and two females taken on nests. Sheppard's notebook gives details of nest contents and the result is—♂♀ on C/2 on 18 October 1908, ♂ on C/2 on 6 December, ♂ on C/2 on 6 December, ♀ on C/2 on 15 December.

Nicator gularis Hartlaub & Finsch

In addition to the C/3 taken on 17 December 1909 (Sheppard, 1910) a clutch was taken on 27 December: both went to the N.M.

Turdidae

Turdus libonyana (Smith)

The N.M. has material from Beira: eggs taken on 22 September 1906, ♀ on C/2 on 23 September; from Mzimbiti: ♂ on C/3 on 17 September 1909. Sheppard found C/2 on 14 November 1910 and watched a newly fledged juvenal under parental care on 6 June 1909. He considered that it came from an egg laid in April, a month in which *T. libonyana* has not been recorded breeding in Rhodesia (Table 1).

Cossypha natalensis Smith

T. B. Oatley (*in litt.*) found C/3 fresh on 23 November at Inharonharo.

Erythropygia quadrivirgata (Reichenow)

In addition to the nest parasitized by *Cuculus solitarius* above (Sheppard, 1910) Sheppard on 15 November 1908 collected two female juvenals with spotted breasts and backs which are now in the T.M.

Sylviidae

Sylvietta whytii (Shelley)

Sheppard took both parents and C/2 on 19 September 1908: all are in the N.M.

Cisticola glactotes (Temminck)

The Q.V.M. has a fresh egg taken at Beira on 15 January 1934 by R. Bolster.

Cisticola fulvicapilla (Vieillot)

The T.M. has C/2 taken at Mzimbiti on 17 October: the eggs are spotted on a blue ground.

Muscicapidae

Muscicapa caerulescens (Hartlaub)

Sheppard found three nests: C/3 on 16 November 1908, 2 young on 16 October 1909, ♀ on C/3 on 16 November. The first is in the T.M. and the third is in the N.M.

Myioparus plumbeus (Hartlaub)

A clutch taken in December 1909 was sent to the N.M.

Melaenornis pammelaina (Stanley)

The N.M. has a ♀ on C/2 taken on 21 November 1909.

Melaenornis pallidus (Müller)

Sheppard found a nest with three young on 17 November 1909 and another with C/3 at which both parents were taken on 25 November. The latter are in the N.M. and are referred to in Priest (1935) who gives the impression it is a Rhodesian record (see Brooke, 1966).

Batis fratrum (Shelley)

The only record is of a female on C/2 on 30 November 1909 in the N.M. (Sheppard, 1910).

Motacillidae

Anthus novaeseelandiae (Gmelin)

Seven nests were found in old tobacco lands: C/2: 1, C/3: 6; May 1, June 2, July 3, Aug. 1. One clutch is in the D.M. (Chubb 1914) and three are in the N.M. together with one male and two female parents. The male is the type of *A. n. spurium* Clancey. The breeding season is quite different to that in Rhodesia where it starts in August and goes through to February with a peak in November (Table 1). Sheppard was convinced that they were migratory: he noted that they arrived in early May 1909, 12 March 1910 and 16 March 1911.

Macronyx croceus (Vieillot)

Sclater (1911) records C/3 found by C. H. B. Grant on 9 November 1906 at Beira.

Laniidae

Laniarius ferrugineus (Gmelin)

The N.M. has two females each taken on C/2 on 25 October 1908 and 1909 respectively.

Dryoscopus cubla (Shaw)

Three nests were found: ♂♀ on C/3 on 24 October 1908, ♂ on C/3 on 9 October 1909, ♂ on C/3 on 3 November. The material of 9 October and the male taken on 3 November are in the N.M.

Tchagra australis (Smith)

The N.M. has a female on C/2 taken on 29 October 1908.

Tchagra senegala (L.)

The T.M. has C/2 taken at Mzimbiti on 15 November 1935 and Sheppard found seven nests which together summarize—C/1: 1, C/2: 6, C/3: 1, Sept. 1, Oct. 2, Nov. 2, Jan. 1, March 1, April 1. One female and three clutches are in the N.M. and one female and clutch are in the D.M.

Prionopidae

Prionops scopifrons (Peters)

A nest with three young on 14 November 1909 (Sheppard 1910) is the only record.

Sturnidae

Cinnyricinclus leucogaster (Boddaert)

Sheppard found five nests, one 10,4 km out of Beira and four at Mzimbiti: C/2: 2, C/3: 1, Sept. 1, Oct. 2, Nov. 1, Dec. 1. Two clutches and a female parent are in the N.M. and one clutch is in the T.M.

Lamprotornis corruscus Nordmann

The N.M. has a female on C/4 taken on 7 January 1906: The nest was 4,5 m up in a Mangrove at Beira where Sheppard found them much commoner than at Mzimbiti.

Nectariniidae

Nectarinia bifasciata (Shaw)

Chubb (1914) records C/1 from the Vanduzi (Vandrisi is a misprint) River, a tributary of the Pungwe taken by A. D. Millar on 3 October 1903 as well as one of Sheppard's clutches from Mzimbiti. Sheppard found 17 nests. The combined results are—C/1: 6, C/2: 12; Oct. 9, Nov. 9. The N.M. has seven clutches and one female parent and the T.M. and D.M. both have one clutch each. See also Table 1.

Nectarinia amethystina (Shaw)

Sheppard found 11 nests: C/1: 2, C/2: 9, Sept. 2, Oct. 5, Nov. 3, Dec. 1. Four clutches with one male and two female parents are in the N.M. Two clutches are in the T.M. and three female parents are in the Los Angeles County Museum of Natural History where they form part of the J. G. Williams collection. See also Table 1.

Anthreptes collaris (Vieillot)

The N.M. has C/1 taken at Beira on 24 January 1909.

Anthreptes reichenowi Gunning

Sheppard (1910) recorded C/3 on 22 October 1909. The T.M. has C/2 taken at Beira on 27 November 1913 by an unknown collector.

Ploceidae

Petronia superciliaris (Blyth)

Three nests were found: ♂ with C/3 on 9 October 1909, two young in the nest on 10 October, ♀ on C/3 on 20 November. Both parents and the second eggs are in the N.M. and the first eggs are in the D.M. (Chubb, 1914).

Ploceus bicolor (Vieillot)

Sheppard found seven nests: C/2: 1, C/3: 3, C/4: 3; Sept. 1, Oct. 3, Nov. 2, Dec. 1. One clutch with the female parent is in the N.M.; one clutch is in the T.M. and one in the D.M. (Chubb, 1914). The female parent of the T.M. clutch is in the N.M. See also Table 1.

Ploceus ocularis Smith

The N.M. has C/2 and C/3 taken at Beira on 22 January 1906 and C/2 with the male parent taken at Mzimbiti on 27 November 1910. All the eggs are spotted on a blue ground whereas the normal ground colour in Rhodesia is a very pale greenish white and eggs with a blue ground are only occasionally found.

Ploceus velatus Vieillot

The N.M. has six clutches taken on 2 October 1908: C/1: 3, C/2: 2, C/4: 1. There is no supporting material but the eggs look like the many authentic ones I have seen. Two C/3 were found in nests 1 m above high water in a Mangrove at Nova Sofala on 13 December 1968 (J. Cooper, pers. comm.).

Ploceus cucullatus (S. Müller)

The T.M. has nine clutches taken on 8 October 1908: C/2: 3, C/3: 6. C/1 was found in a nest 2,75 m above high water in a Mangrove at Nova Sofala on 13 December 1968 (J. Cooper, pers. comm.).

Ploceus xanthops (Hartlaub)

The T.M. has C/2 taken at Beira on 28 November 1933 by an unknown collector.

Ploceus subaureus

The N.M. has C/2 taken at the 4,8 km swamp, Beira, on 8 April 1906 as well as a male in non-breeding plumage.

Euplectes hordeaceus (L.)

Menegaux (1910) records that they were breeding in Acacia at Gwengere in February. The species normally breeds in very rank grass, Acacia being the preferred nest site for *Quelea quelea* (L.).

Vidua paradisea (L.)

See under *Pytilia melba* below.

Pytilia melba (L.)

The T.M. have C/2 plus an egg of *Vidua paradisea* taken by A. D. Millar in the Gorongosa National Park on 3 October 1903.

Mandingoa nitidula (Hartlaub)

The National Museum of Rhodesia in Bulawayo has a newly fledged male juvenal taken at Dondo on 5 September 1962.

Ortygospiza locustella (Neave)

A female juvenal with visible gape flanges was taken at Savane, north of Beira on 17 September and is now in the D.M. (Clancey, 1969*a*).

Spermestes cucullatus Swainson

The N.M. has a female taken on C/5 on 2 January 1909.

Spermestes fringilloides (Lafresnaye)

Sheppard found twelve nests, four at Beira (or 10,4 km out on the Dondo road?) and eight at Mzimbiti: in all C/3: 2, C/5: 5, C/6: 2; Oct. 3, Nov. 3, Dec. 1, Jan. 3, March 2. I assume that a C/10 in the N.M. is the product of two females laying in one nest. Nine clutches and two parents, one of each sex, are in the N.M. and one C/6 is in the T.M. This is said by Roberts (1939) to contain an egg of a *Vidua* sp.

Fringillidae

Serinus mozambicus (S. Müller)

Sheppard found two nests: C/3 on 24 September 1909 now in the N.M.; a nest with eggs on 19 March 1911.

Serinus sulphuratus (L.)

The N.M. has a female taken on C/1 on 24 September 1909.

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